THE
ATMOSPHERIC RESERVOIR
Examining the Atmosphere and Atmospheric Resource Management

Update on the 2003 NDCMP

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The 2003 North Dakota Cloud Modification Project (NDCMP) started operations for the season on June 1. This year marks the 28th consecutive season of cloud seeding operations under the administration of the Atmospheric Resource Board, though many North Dakota counties have been involved in cloud seeding for more than 40 years. The NDCMP is split into two operational districts, with District I consisting of Bowman and part of Slope County, and District II including McKenzie, Mountrail, Ward and Williams Counties. The primary NDCMP goals are hail suppression and enhancement of rainfall from summer thunderstorms. The most recent evaluations show the NDCMP is having success, as crop-hail losses have been reduced by 45 percent and rainfall increased 7 to 15 percent.

Anyone who's spent time in North Dakota knows that our weather tends to change rather frequently. As the saying goes, "if you don't like the weather stick around for a few minutes because it's bound to change." Summer 2003 has upheld that tradition. Seeding operations in NDCMP counties have been fairly typical through the end of July (when this column was written). Thunderstorm frequency, and consequently, flight operations have followed a rollercoaster pattern through the first two months of the project. The first week of the NDCMP saw 117 hours of flight time from the project's eight seeding aircraft, while the second week of June saw only 47 hours. This pattern has continued through July as a busy week has been followed by a slow week and vice-versa.

Through August 1, a total of 539 hours had been flown on project. Of those, 337 were for hail suppression, 162 for rain enhancement, and 40 for reconnaissance and other purposes. Operations have been conducted day and night as weather conditions warranted. Barring an extension of the NDCMP, the project will conclude at midnight CDT on September 1.

New Recordkeeping Systems Tested, Deployed

Detailed records, required by law, are kept for every flight conducted by NDCMP seeding aircraft. One of the recommendations of the Operations and Safeguards committee, which conducted a thorough review of the NDCMP earlier this year, was a transition from paper records to a system utilizing a digital format.

Two such systems have been in development since the spring of 2003. The first system uses a Palm Pilot personal digital assistant wirelessly interfaced with a GPS. It has been field tested by two NDCMP seeding aircraft this summer. The system collects location information from the GPS at a prescribed time interval during flight in addition to storing data input by the pilot crew. Flight data can then be uploaded to the ARB database in Bismarck via standard telephone line. During the testing phase, modifications have been made in response to software operation and user input. The current timetable for full deployment is June of 2004.

Palm Pilots like this one are used to collect location information and other flight data.

In addition to the aircraft system, a new meteorological recordkeeping system was developed and deployed in time for the 2003 NDCMP. Meteorological and operational records are entered through a user interface developed in-house. These data are then uploaded directly to the ARB database in Bismarck on a daily basis.

Both systems provide better data organization and accessibility for real-time operational use by NDCMP pilots and meteorologists. Additionally, project information will be more readily accessible for post-analysis, project evaluations, and requests from the public. ■

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